Center Innovation Fund: JPL CIF

Demonstration of 6DOF Arc-mim/mm Control in the FCT Using Proba-3 Metrology and Control System

Completed Technology Project (2012 - 2013)

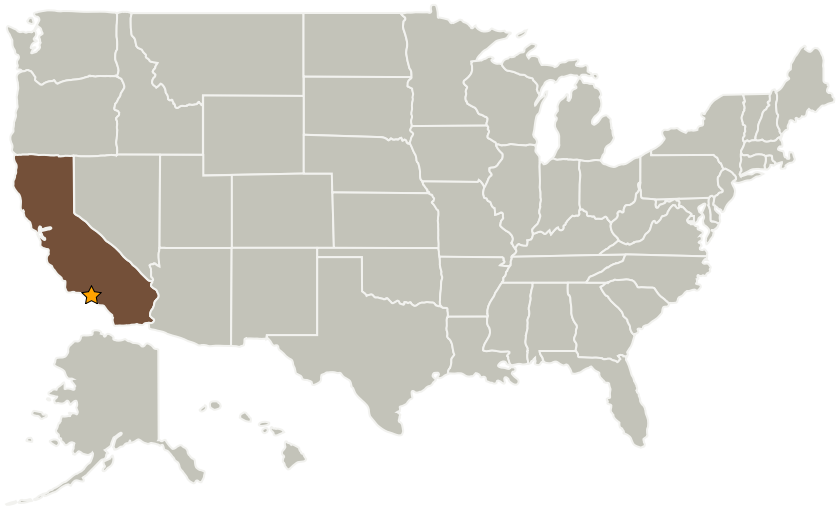
Project Introduction

Implement in FCT avionics and attitude control architecture and software that enables order of magnitude increase in control capability for next-generation formation flying technology demonstrations; Demonstrate full 6DOF control in the FCT for the first time; Demonstrate Proba-3 formation flying sensors and software that achieves 2 orders of magnitude higher performance than demonstrated capability.

Anticipated Benefits

This task innovates and demonstrates two key strengths directly applied to non-cooperative target, autonomous rendezvous and docking missions: NASA's Guidance and Control capabilities and 6DOF full dynamic testbed with flight-like hardware and software.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California

Demonstration of 6DOF Arc-mim/mm Control in the FCT Using Proba-3 Metrology and Control System

Table of Contents

Project Introduction	1
Anticipated Benefits	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Innovation Fund: JPL CIF

Demonstration of 6DOF Arc-mim/mm Control in the FCT Using Proba-3 Metrology and Control System

Completed Technology Project (2012 - 2013)

Primary U.S. Work Locations

California

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Fred Y Hadaegh

Project Manager:

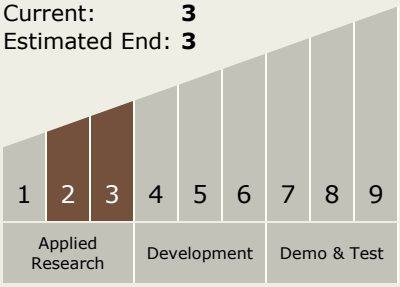
Jonas Zmuidzinas

Principal Investigator:

Cheng-chih Chu

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX01 Propulsion Systems
  - TX01.1 Chemical Space Propulsion
    - TX01.1.1 Integrated Systems and Ancillary Technologies